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Gender Differences in Spatial Memory and Manipulation

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Gender differences in performance on spatial memory and manipulation tasks were evaluated. Participants were 286 undergraduate students (212 female; 73 male). Two geometric shapes were presented in four conditions (15 trials each): both shapes superimposed over each other in the center of a computer screen (simultaneous-centered); one shape on the left side of the screen and the other on the right (simultaneous-offset); one shape on the left side followed by the other on the right (delayed-offset); and one shape in the center followed by the other in the center (delayed-centered). After being presented with the two shapes, participants were to select the combined shape that would result if the two shapes were superimposed on top of each other. Males were significantly more successful than females in choosing the correct combined shape in the delayed-centered and simultaneous-offset conditions. In addition, males performed all four of the tasks more rapidly than their female counterparts. The results indicate that males can manipulate objects across space and time more efficiently than females when the visual stimuli are presented either simultaneously at different locations or at the same location on a delayed schedule.